OIPE IAP2 APR 10 2006 PATENT & TRADEMARK OFFICE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Alan J. HEEGER et al.

Title: REAGENTLESS, REUSABLE, BIOELECTRONIC DETECTORS AND THEIR USE AS AUTHENTICATION DEVICES

Appl. No.: 10/678,760

Filing Date: 10/3/2003

Examiner: Robert Thomas Crow

Art Unit: 1634

CERTIFICATE OF MAILING
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Mail Stop Amendment, **Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450**, on the date below.

Esther Lily C. Esguerra
(Printed Name)

(Signature)

April 5, 2006
(Date of Deposit)

INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR §1.56

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith on Form PTO-1449 is a listing of documents known to Applicants in order to comply with Applicants' duty of disclosure pursuant to 37 CFR §1.56.

A copy of each non-U.S. patent document and each non-patent document is being submitted to comply with the provisions of 37 CFR §1.97 and §1.98.

The submission of any document herewith, which is not a statutory bar, is not intended as an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 CFR §1.56(b). Applicants do not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any document which is determined to be a *prima facie* art reference against the claims of the present application.

TIMING OF THE DISCLOSURE

The listed documents are being submitted in compliance with 37 CFR §1.97(b), before the mailing date of the first Office Action on the merits.

RELEVANCE OF EACH DOCUMENT

The relevance of the foreign-language document is described in the present specification. An English translation of the foreign-language document (B3) enclosed. However, the absence of such translation does not relieve the PTO from its duty to consider the submitted foreign language document (37 CFR §1.98 and MPEP §609).

Applicants respectfully request that each listed document be considered by the Examiner and be made of record in the present application and that an initialed copy of Form PTO-1449 be returned in accordance with MPEP §609.

Although Applicant believes that no fee is required for this Request, the Commissioner is hereby authorized to charge any additional fees which may be required for this Request to Deposit Account No. 50-0872.

Respectfully submitted,

Date: April 5, 2006

By _____

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Form PTO-1449 (MODIFIED)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. 327823-1050	SERIAL NO. 10/678760
INFORMATION DISCLOSURE CITATION *(Use several sheets if necessary)*		APPLICANT Alan J. HEEGER et al.	
		FILING DATE 10/3/2003	GROUP ART UNIT 1634

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U.S. PATENT DOCUMENTS

EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE IF APPROPRIATE
	A1	5,139,812	8/8/1992	Lebacq, Philippe	427	7	

FOREIGN PATENT DOCUMENTS

	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION YES	TRANSLATION NO
	B1	CN1422960	6/11/03	China **[English Abstract]**				X
	B2	CN1422961	6/11/2003	China **[English Abstract]**				X
	B3	WO/04/035929	4/29/2004	Japan			X	
	B4	WO/1999/57317	11/11/1999	PCT				

OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*

	C1	Kuhr, et al. „Electrochemical DNA analysis comes of age" *Nature Biotech* 18:1042-1043 (2000)
	C2	Willner, Itamar "Biomaterials for Sensors, Fuel Cells, and Circuitry" *Science* 298:2407-2408 (2002)
	C3	Fritz, et al. "Electronic detection of DNA by its intrinsic molecular charge" *Proc. Natl. Acad. Sci., USA* 99(22):4142-14146 (2002).
	C4	Brazill, et al. "Capillary Gel Electrophoresis with Sinusoidal Voltammetric Detection: A Stratego To Allow Four-"Color" DNA Sequencing" *Anal Chem.* 73:4882-4890 (2001)
	C5	Palecek, et al. "Electrochemistry of Nucleic Acids and Development of DNA Sensors" *Crit. Rev. Anal. Chem.* 32(3):261-270 (2002)
	C6	Millan et al."Sequence-Selective Biosensor for DNA Based on Electroactive Hybridization Indicators" *Anal. Chem.* 65:2317-2323 (1993)
	C7	Kelley, et al. "Single-base mismatch detection based on charge transduction through DNA" *Nucleic Acids Res.*27(24):4830-4837 (1999)

EXAMINER	**DATE CONSIDERED**

* **EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include any copy of this form with next communication to applicant.**

Form PTO-1449 (MODIFIED)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. 327823-1050	SERIAL NO. 10/678,760
INFORMATION DISCLOSURE CITATION		APPLICANT Alan J. HEEGER et al.	
		FILING DATE 10/3/2003	GROUP ART UNIT 1634
(Use several sheets if necessary)			

OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*

	C8	Ihara et al "Ferrocene-oligonucleotide conjugates fro electrochemical probing of DNA" *Nucleic Acids Res* 24(21):4273-4280 (1996)
	C9	Yu, et al. "Electronic Detection of Single-Base Mismatches in DNA with Ferrocene-Modified Probes: *J. Am. Chem. Soc.* 123:11155-11161 (2001)
	C10	Umek et al. "Electronic Detection of Nucleic Acids" *J. Mol. Diag.* 3(2):74-84 (2001)
	C11	Park et al. "Array-Based Electrical Detection of DNA with Nanoparticle Probes" *Science* 295:1503-1506 (2002)
	C12	Korri-Youssoufi, et al. "Toward Bioelectronics: Specific DNA Recognition Based on an Oligonucleotide-Functionalized Polypyrrole" *J. Am. Chem. Soc.* 119:7388-7389 (1997)
	C13	Clelland et al. "Hiding messages in DNA microdots" *Nature* 399:533-534 (1999)
	C14	Cox et al. "Bar coding objects with DNA" *Analyst* 126:545-547 (2001)
	C15	Fan et al. "Spectroscopy and Electrochemistry of the Covalent Pyridine-Cytochrome c Comples and a Pyridine-Induced, "Alkaline-like" Conformation" *J. Phys. Chem. I(B)* 106:11375-11383 (2002)
	C16	Hirst, J. et al. "Kinetics and Mechanism of Redox-Coupled, Long-Range Proton Transfer in an Iron-Sulfur Protein. Investigation by Fast-Scan Protein-Film Voltammetry" *J. Am. Chem. Soc.* 120:7085-7094 (1998)
	C17	Tyagi et al. "Molecular Beacons: Probes that Fluoresce upon Hybridization" *Nat. Biotechnol.* 14:303-308 (1996)
	C18	Boon et al. "An electrical probe of protein-DNA interactions on DNA-modified surfaces" *Nat. Biotechnol.* 20:282-286 (2002)
	C19	O'Sullivan, et al. "Aptasensors – the future of biosensing?" *Anal. Bioanal. Chem.* 372:44-48 (2002)
	C20	Robertson et al. "In vitro selection of an allosteric ribozyme that transduces analytes to amplicons" *Nature Biotech* 17:62-66 (1999)
	C21	Stojanovic et al. "Fluorescent Sensors Based on Aptamer Self-Assembly" *J. Am. Chem. Soc.* 122:11547-11548 (2000)
	C22	Cook et al. "Methylated DNA labels for marking objects: *Biotechnol. Lett* 25:89-94 (2003)
	C23	Immoos et al. "Characterization of Immobilized DNA Hairpins Containing Tethered Redox Probes" *Dept. of Chemistry, Duke University, P.M. Gross Laboratory, Durham, NC*

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